

REMARKS/ARGUMENTS

Claims 1-6, 20 and 21 are pending herein. Claim 21 has been rewritten in independent form, entry of which after final rejection would be proper under Rule 116 because no new issues are presented for the PTO's consideration (i.e., a dependent claim has been rewritten in independent form).

Examiner Simone is thanked for courtesies extended to Applicants' representative (Steven Caldwell) during a telephonic interview on January 12, 2004. During the interview, Examiner Simone tentatively acknowledged that the applied prior art (Watanabe et al.) does not appear to disclose polarization-maintaining fibers (as claimed), but wished to discuss the matter with her supervisor before withdrawing the sole art rejection applied in this case (discussed below). Examiner Simone requested that Applicants submit detailed comments in writing for further review with her supervisor. The following discussion is a detailed account of the subject matter discussed during the interview.

1. Claims 1-6 and 20 were rejected under §102(b) over Watanabe et al. This rejection is respectfully traversed.

Pending independent claim 1 recites, among other things, that at least some of a plurality of polarization-maintaining fibers are surrounded by a ribbon portion, which has first and second lateral ends and a length of 2 to 300 mm. An example of the claimed polarization-maintaining fibers is shown in Fig. 1(d) of the present application, which illustrates that the polarization-maintaining fibers 10 each include an optical fiber core 14, stress applying parts 16 and a cladding portion 18. For the reasons discussed below, the Watanabe patent does not disclose or suggest an optical coupler including polarization-maintaining fibers, as claimed.

Before discussing Watanabe, as discussed during the interview, special difficulties are presented when attempting to couple polarization-maintaining fibers with an optical device. Polarization-maintaining fibers are fibers through which light propagates in a specific, desired plane of polarization and differ from "ordinary" optical fibers in that, in addition to aligning the fibers with the optical device in the X, Y and Z directions, polarization-maintaining fibers must also be rotationally aligned around the Z-axis relative to a certain coupling position on the optical device in order to insure that light exiting the fiber is emitted at the desired

polarization plane. The principal manner of aligning polarization-maintaining fibers is to align a first end of the fiber relative to the optical coupling device, inject light from a polarized light source into a second end of the fiber, and then rotate each individual fiber relative to a certain coupling position while, at the same time, monitoring the polarization plane of the propagated light exiting the first end of the fiber with a photodetector. The photodetector is used to determine the fiber orientation at which the coupling of light in the preferred polarization plane is optimum. The rotationally oriented first end of the polarization-maintaining fiber is then permanently fixed in place.

It should be appreciated, based on the above discussion, just how tedious and error prone it is to rotate and align a large number of individual polarization-maintaining fibers to insure that light is emitted at a specific, desired polarization plane for coupling to an optical device. Applicants discovered that groups or units of pre-oriented, rotationally-aligned polarization-maintaining fibers, for example, Figs. 2(a)-(c) of the present application show units of eight polarization-maintaining fibers, can be easily and efficiently combined to form an array including a large number of polarization-maintaining fibers, each of which emits light at a desired, specific polarization plane. This is possible because, again, the polarization-maintaining fibers have already been rotationally aligned and grouped into smaller, more manageable units, and thus the cumbersome step of rotating all of the individual polarization-maintaining fibers within the larger array can be advantageously eliminated when coupling the array to the optical coupling device.

Watanabe discloses a multiple-core optical connector. The PTO is arguing that optical fibers 4(a) shown in Watanabe's Figs. 18(a) and 18(b) correspond to polarization-maintaining fibers, as claimed. The PTO has not, however, cited to any portion of the Watanabe patent that provides factual evidence showing that optical fibers 4(a) are polarization-maintaining fibers. To the contrary, Applicants respectfully submit that skilled artisans would easily understand that the optical fibers disclosed in Watanabe are "ordinary" optical fibers, and are in fact not polarization-maintaining fibers, as claimed. This is clearly evidenced by the fact that the above-discussed special coupling considerations (e.g., rotational alignment of the fibers with respect to a coupling position) that accompany the use of polarization-maintaining fibers are not addressed in Watanabe, not even in passing. Without

such a discussion of the characteristics associated with polarization-maintaining fibers, skilled artisans would, upon reading the Watanabe patent, undoubtedly understand that if one attempted to rotate one of Watanabe's "ordinary" optical fibers 4(a) in the Z-axis direction, optical fiber tape 6(a), for example, shown in Watanabe Figs. 18(a)-(d), would cause the fiber to rotate back to the position at which the fiber was originally fixed by the optical fiber tape during its manufacture. The PTO has simply failed to show that Watanabe discloses or suggests an optical connector including polarization-maintaining fibers, as claimed.¹

In view of all of the foregoing, reconsideration and withdrawal of the §102(b) rejection over Watanabe et al. are respectfully requested.

Pending independent claim 21, which, as discussed above, has been rewritten in independent form, was not discussed in the pending Office Action. Pending claim 21 recites that the ribbon portion surrounding at least some of the polarization-maintaining fibers includes a material that can be stripped to expose the polarization-maintaining fibers. Applicants respectfully submit that Watanabe fails to disclose or suggest polarization-maintaining fibers, let alone that a ribbon portion surrounding the polarization-maintaining fibers can be stripped to expose the polarization-maintaining fibers. Again, since Watanabe's optical fibers have not been rotationally aligned prior to being housed in optical fiber tape 6(a), skilled artisans would not expect the optical fibers disclosed in Watanabe to maintain a post-rotation position. Accordingly, pending claim 21 should also be indicated as allowable.

The PTO was requested to confirm receipt and consideration of the IDS filed March 11, 2002 in the July 29, 2003 and September 5, 2003 Amendments. Confirmation of receipt and consideration of the March 11, 2002 IDS would be greatly appreciated. In addition, the PTO is requested to confirm receipt and consideration of the IDS filed October 10, 2003.

If Examiner Simone believes that further contact with Applicants' attorney would be advantageous toward the disposition of this case, she is herein requested to call Applicants' attorney at the phone number noted below.

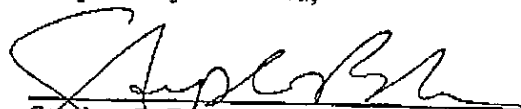
¹Anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *In re Robertson*, USPQ2d 1949, 1950 (CAFC 1999).

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

January 16, 2004

Date



Stephen P. Burr

Reg. No. 32,970

SPB:SWC:skh

BURR & BROWN
P.O. Box 7068
Syracuse, NY 13261-7068

Customer No.: 025191
Telephone: (315) 233-8300
Facsimile: (315) 233-8320